**What is claimed is**:

1. A method of detecting transcription activity comprising detecting the presence or absence of a nick in a DNA molecule, wherein the presence of a nick in the DNA molecule indicates transcription activity.

2. The method of claim 1 wherein the presence or absence of a nick in a DNA molecule is measured by determining the change in electrophoretic mobility of nicked DNA on an electrophoretic gel.

3. The method of claim 1 wherein the presence or absence of a nick in a DNA molecule is determined by a SI nuclease assay.

4. The method of claim 1 wherein the presence or absence of a nick in a DNA molecule is determined by a primer extension reaction.

5. The method of claim 1 wherein the presence or absence of a nick in a DNA molecule is determined by a polymerase chain reaction amplification reaction.

6. The method of claim 1 wherein the presence or absence of a nick in a DNA molecule is determined by a DNA sequencing assay.

7. The method of claim 1 wherein the presence or absence of a nick in a DNA molecule is determined by a protein binding assay.

8. The method of claim 1 wherein the DNA is affixed to a matrix.

9. The method of claim 8 wherein the matrix is a biological chip.

10. A method of detecting transcription activity comprising the steps of :

a) providing a DNA template comprising at least one binding region for a transcription factor;

b) contacting the DNA template with at least one transcription factor; and

c) detecting the presence or absence of a nick in the DNA template, wherein the presence of a nick in the DNA template indicates transcription activity.

11. The method of claim 10, wherein the transcription factor is in a nuclear cell extract.

12. The method of claim 10, wherein the DNA template is inserted into a viral or plasmid vector and introduced into a cell.

13. The method of claim 10, wherein the DNA template is fixed to a matrix.

14. The method of claim 13, wherein the matrix is a biological chip.

15. A method of screening for an active transcription factor, the method comprising the steps of:

a) providing a DNA template;

b) contacting the DNA template with a test protein; and

c) detecting the presence or absence of a single-stranded nick in the DNA template, wherein the presence of a nick in the DNA template indicates that the test protein is an active transcription factor.

16. The method of claim 15, wherein the DNA template is fixed to a

matrix.

17. The method of claim 16, wherein the matrix is a biological chip.

18. The method of claim 15, wherein the test protein is present in a cell extract.

19. The method of claim 15, wherein the test protein is a recombinant protein.

20. The method of claim 15, wherein said DNA template comprises at least one binding region for a transcription factor.

21. A method of modulating transcription activity comprising the steps of:

a) providing a DNA sequence to be transcribed, wherein the DNA sequence comprises at least one consensus binding site for a nicking transcription factor; and

b) contacting the DNA sequence with a nicking transcription factor, wherein the nicking transcription factor catalyses a nick in the DNA template.

22. The method of claim 21, wherein the DNA sequence is inserted into a viral or plasmid vector and said viral or plasmid vector is introduced into a cell.

23. The method of claim 22, wherein said cell is an animal cell.

24. The method of claim 23, wherein said mammalian cell is a human cell.

25. The method of claim 22, wherein said cell is selected from the group consisting of mammalian cells, yeast cells, insect cells, algae cells and plant cells.

26. The method according to claim 25, wherein the plant cell is a monocot
or a dicot cell.

27 The method of claim 21, wherein the nicking transcription factor is phosphorylated *in vitro* before contacting the DNA sequence.

28. The method of claim 21, wherein the nicking transcription factor is a recombinant nicking transcription factor comprising at least one acidic amino acid substitution, or conversely one amino acid substitution that cannot be phosphorylated.

29. A method of producing a single-stranded nick in a double stranded DNA molecule comprising contacting the DNA molecule with a nicking transcription factor.

30. The method of claim 29, wherein the nicking transcription factor is phosphorylated.

31. The method of claim 29, wherein the nicking transcription factor is a recombinant nicking transcription factor comprising at least one acidic amino acid substitution, or conversely one amino acid substitution that cannot be phosphorylated.

32. A kit for the rapid detection of transcription activity comprising a regent for detecting the presence or absence of a single stranded nick in a DNA molecule.

33. The kit according to claim 32, wherein said reagent includes material for an electrophoretic gel.

34. The kit according to claim 32, wherein said reagent includes materials for an SI nuclease assay.

35. The kit according to claim 32, wherein said reagent includes materials for a primer extension assay.

36. The kit according to claim 32, wherein said reagent includes materials for a polymerase chain reaction.

37. The kit according to claim 32, wherein said reagent includes materials for a DNA sequencing reaction.

38. A kit for rapid screening for an activated transcription factor, the kit comprising:

a) a DNA template comprising at least one consensus sequence for a nicking transcription factor; and

b) at least one detection reagent which is capable of identifying a nicked DNA template.

39. The kit of claim 38, wherein the DNA template is fixed onto a matrix.

40. The kit of claim 39, wherein the matrix is a biological chip.

41. The kit of claim 38, wherein the detection reagent comprises a detectable label.

42. The kit of claim 38, wherein the detectable label is a radioisotope, a fluorophore, biotin, a chemiluminescent compound, or a conjugated antibody.

43. A method for detecting a DNA consensus sequence for a nicking transcription factor, the method comprising the steps of:

a) providing a DNA molecule comprising a transcription promoter region or a region upstream of a transcription initiation site of a gene;

b) contacting the DNA molecule with a nicking transcription factor;

c) detecting the absence or presence of a single stranded nick in the DNA molecule; and

d) identifying the consensus sequence surrounding the single stranded nick in the DNA.

44. The method of claim 43, wherein the nicking transcription factor is phosphorylated *in vitro* before contacting the DNA molecule.

45. The method of claim 43, wherein the nicking transcription factor is a recombinant nicking transcription factor comprising at least one acidic amino acid substitution modification, or conversely one amino acid substitution that cannot be phosphorylated.

46. A method of identifying a transcription factor comprising detecting the presence or absence of a nick in a DNA molecule wherein the presence of a nick indicates transcription activity.

47. The method of claim 46 wherein the presence or absence of a nick in a DNA molecule is measured by determining the change